EDITORIAL ARTICLES.

THE OPERATIVE TREATMENT OF CANCER OF THE RECTUM.

1. ROUTIER. Cancer annulaire de la partie supérieure du rectum; resection par le voie sacrée. Par M. A. ROUTIER (Paris). *Bull. et Mém. de la Soc. de Chirurgie de Paris.* 1889, October-November.

2. STIERLIN. Ueber der operativ Behandlung des Rektum Carcinoms und deren Erfolge. DR. R. STIERLIN (Zuiich). Bruns' *Beiträge zur klin. Chirurgie,* 1889, Bd. v, Hft. iii.

3. JESSOP ET AL. Discussion on the Treatment of Cancer of the Rectum in the Surgical Section of the British Medical Association at Leeds, August, 1889. *Brit. Med. Journal,* Aug. 24 and Oct. 12, 1889.

1. In this communication M. Routier reports a case in which he successfully removed four inches of the rectum, which was the seat of an annular carcinoma. The lower border of the growth was about five inches above the external sphincter. The woman was æt. 29 years. Her bowels having been well cleared out by preliminary cathartics, and the rectum having been washed out with a carbolated solution, the operation was done as follows: Right lateral decubitus; incision along the left of the sacral spines from the level of the left posterior iliac spine downward to a point about two inches above the anus; denudation of the coccyx and lower part of the sacrum; disarticulation of the coccyx which was taken away after stripping it of its periosteum from above downward; removal of the first piece of the coccyx, which had remained in place, by a transverse cut with bone forceps; followed by resection of the left inferior angle of the sacrum. The last sacral foramen was not touched. The lower border of the cancer was now accessible. The rectum was now separated from the anterior face of the sacrum easily with the fingers; the separation of the rectum from the vaginal wall was much more difficult, and in the course of this stage,

the peritoneal cul-de-sac was opened, which was at once tamponed with a sponge. The opening of the peritoneum facilitated the pulling down of the intestine. A strong silk ligature was now thrown around the rectum both above and below the growth, and a silk loop was passed through the meso-rectum above to prevent the upper end of the rectum from slipping beyond reach after section had been made. The cancerous part was now cut away with scissors. Both ends of the gut were tamponed with iodoformed cotton. The peritoneal rent was now sutured. The two ends of the rectum were now brought together and sutured by a double row of sutures. A few points of suture were applied to the external wound so as to diminish its extent somewhat, and finally the remaining cavity was stuffed with iodoform gauze.

The after-history was simple. The patient passed gas by the anus the next day; some toxic symptoms necessitated the substitution of salicylated gauze for the iodoform; the bowels moved on the seventh day, the sphincter working perfectly; two days later another stool occasioned the formation of a small fistula which permitted the escape of liquid matter.

The reporter is justly much pleased with the result in this case. He follows its description with some criticisms on the prevailing practice in France in cancers of the rectum. He claims for French surgery the honor of introducing the practice of extirpation of rectal neoplasms lying quite low, the names of Faget (1739), Lisfranc (1826) and Amussat being especially associated with its early history. For various reasons, however, extirpation of even such cases has fallen into disuse to be replaced by such palliative methods as colotomy and rectotomy, to overcome obstruction. Routier is convinced that something more can be done for these cases than is accomplished by these palliative operations which leave the patients suffering either with an artificial anus or with rectal incontinence during the remainder of their lives. In the *Revue de Chirurgie*, for December, 1889, he also returns to this subject by presenting a mass of statistics on the subject. The table compiled by Frank, in the *Dublin Journal Medical Sciences*, Vol. 83, ascribes a mortality of 30% to operations for amputation of the rectum done by the older surgeons. Gross, *System of Surgery*,

gives the mortality as 20% in a total of 193 cases; Ball, out of 175 cases, finds a mortality of 16%, and Cripps puts it at 17% in 76 cases, 23 of which were his own.

The influence of a careful selection of cases is seen, however, in Czerny's experience at Heidelberg, who, out of 43 cases seen, considered only 25 fit subjects for operation, and of these only 1 died.

As to the final results after extirpation, according to Gross, of 154 cases which survived the operation, 51 had a local return, 14 had metastases in other parts of the body, 53 were without return of the trouble at periods varying from 6 months to 10 years, 6 arrived to this late period, 29 had no return for a period of 2 years, 36 were lost sight of after six months.

In Cripps' statistics of 63 surviving cases, 16 were lost sight of, 11 remained cured for a period varying from a few months to several years; 3 were without recurrence after 4 years, and 14 had a relapse between 6 months and 4 years. Of his personal cases, 6 remained cured from 2 to 4 years, and 9 had a return of the trouble in from 4 months to 2 years.

Czerny has 9 cases of cure, 6 of which are over 2 years' standing, and 3 over 3 years.

At the German Surgical Congress of 1888 König gave his personal experience; he had operated on 60 patients, with a mortality of 10%; his results were: without return of the disease after 3 years, 10%; without return of the disease after 2 years, 18%.

Bardenheuer has succeeded in lowering his mortality from 10 to 5%, and cites three women who remained cured after a lapse of 6, 7 and 8 years. These figures show that something better can be done for cancer of the rectum than a simple colotomy or a linear rectotomy.

The operation which is to be chosen for the removal of the new growth varies with its situation.

The great objection to the circular amputation is the removal of the sphincter ani, thus leaving the patient in a condition of fæcal incontinence for gases, liquid and semi-liquid substances; nevertheless this is better than a colotomy.

Those cancers which are too low to be removed by laparotomy,

and too high for an extirpation in the usual manner are the ones suitable for Kraske's operation. Certain modifications of the method proposed by Kraske have been proposed. As to the lateral section of the sacrum, Bardenheuer (vid. ANNALS OF SURGERY, 1888, vol. VII, p. 137) prefers transverse division of this bone below the third sacral foramen. Schede, in one case, went above this point, but his patient afterward suffered from paralysis of the bladder. Others have suggested a temporary resection, the flaps being devised so that the sacrum would remain adherent to them while they had a pedicle sufficient for their nutrition. (Heinecke, Levy, ANNALS OF SURGERY, 1889, December, pp. 445 and 462.)

As to the peritoneum, Kraske proposes a deliberate opening of the peritoneum to facilitate the pulling down of the intestine. Bardenheuer on the contrary, proposes to strip up the peritoneum from the intestine. Most operators open the peritoneum deliberately and tampon it during the rest of the operation with iodoform gauze. Some do not close the peritoneum when the operation is terminated, or close only partially, leaving a drain in the opening. Others close the abdominal cavity by suturing the parietal peritoneum to the serous investment of the intestine; to facilitate this procedure it is necessary to take care to open the cul-de-sac quite close to the intestine.

All operators cut the rectum across, above and below the growth as far as possible from it. Kraske, and many others following his example, slit the posterior wall of the rectum down to the sphincter before making the transverse cut below the cancer. Heinecke even goes so far as to divide the sphincter. As to the management of the two cut ends of the intestine, Kraske has abandoned the complete circular suture, and in order to prevent escape of fecal matters into the peritoneal cavity provides an artificial anus at the level of the line of suture. Heinecke and Hochenegg go farther and suture the upper cut end of the intestine to the cutaneous borders of the sacral incision, reserving the closure of this artificial anus for a later operation. Schede, on the contrary, makes the complete suture, and then establishes a temporary artificial anus in the inguinal region.

All surgeons are agreed as to the manner in which the sacral wound

should be treated. It should be left open and tamponed with iodoform gauze.

M. TERRIER, in commenting on this report of M. Routier, at the meeting of the Paris Surgical Society, reported two cases in which he had removed high lying cancer of the rectum by enlarging the natural passage by linear rectotomy, and by resection of the coccyx.

His first operation was done in December, 1888, upon a man æt. 57 years, who was the subject of an annular cancer of the rectum, the lower border of which was about three inches above the anus. The intestine was first disinfected by irrigations of beta naphthol and boracic acid solutions. The patient was placed in the lithotomy position. An incision was then made from the anus to the coccyx, so as to widely open the rectum posteriorly. The healthy parts were then separated from the diseased parts above by a circular incision through the lateral and anterior walls of the intestine. Then above this circular incision the rectal walls were stripped up by fingers and scissors so as to isolate the intestine and bring down the tumor as low as possible. To facilitate this latter proceeding a part of the coccyx had to be resected, the sphincter ani was divided in front and the vesico-rectal fold of the peritoneum was opened. Finally the whole diseased part was cut away with the scissors. The peritoneum was sutured. The upper healthy portion of the rectum was sutured to the lower part with strong catgut. The sphincter was sutured both before and behind; a drain was put in front of the reunited gut, and the external wound was tamponed with iodoform gauze.

The patient recovered rapidly; union between the two parts of the rectum was secured; for some time there was incontinence of feces, but from the tenth day the desire for defecation began to be felt, and the stools became voluntary. Three months and a half after the operation everything was doing well, there was no stricture, but the ano-coccygeal wound was not yet perfectly healed.

His second case was operated in May, 1889 The patient was a lady æt. 43 years. The margin of the growth was nearly five inches from the anus and there was considerable infiltration of the adjacent tissues. The same method of operating was pursued except that the sphincter

was not divided in front, and the coccyx was entirely removed. The peritoneal fold was freely opened, the entire diseased tissue was excised little by little, some enlarged glands were removed from the mesentery, and finally the healthy intestine was brought down and fixed in front to the healthy mucous membrane of the anal portion below by catgut sutures. Behind, however, there was not sufficient length of intestine to enable the two parts to be brought together, and therefore the membrane was here attached to the skin. Drains were placed on either side in the ischio-rectal fossæ: iodoform dressings. Portions of the mucous membrane later necrosed in consequence of the tension upon the sutures. Nevertheless the patient was up at the end of a month. The stools were for a long time involuntary, but finally the patient gained control over them and they are painless.

2. The first to plan and perform extirpation for cancer of the rectum was Lisfranc (1822). But the modern revival and extension of the operation is claimed by the Germans.

As a contribution to this subject there are here reported 40 cases observed in the practice of Kronlein, at Zurich, during the years 1881-88 incl. Of these 20 were subjected to radical operation and 13 to colottomy, whilst 7 were not operated.

The later course of these cases Stierlin has been able to follow up carefully:

Recent statistics are quoted showing that in Canton Zurich about 1 death from rectal cancer occurs amongst 300 deaths from all causes, and that of all deaths from cancer $3\frac{1}{3}\%$ affect the rectum.

Amongst causes of cancer he specifies heredity, as in 5 of his 40 cases it had been observed in other members of the family; usually in the parents and almost always cancers of the stomach. In one case it occurred in 3 continuous generations. This gives $12\frac{1}{2}\%$, whilst Schulthess for mammary cancer found 10% Haberlin (1889) for ventricular cancer found 8%, and Heuck for rectal only 4.6%.

Habitual constipation for many years before the appearance of distinct symptoms of rectal cancer was stated in 4 cases (10%), and hæmorrhoids in 6 (15%). One patient had suffered much in youth from prolapsus ani; and on one pæderasty had long been practiced.

Most of these patients were from 40 to 70 years old, averaging 52.2 years (54.4 for males and 50 for females).

The collective statistics of Stierlin, Heuck, Bryant and Hildebrand, amounting in all to over 400 cases of rectal cancer, show that it is about twice as frequent in males as in females.

Histologically, Stierlin's cases were mostly columnar-epithelial carcinoma (also 1 alveolar cancer, 2 simple adenomas, 1 suspicious adenoma, 1 very malignant destructive adenoma, 1 cancroid of the anal portion). The seat of the neoplasm was in 28 cases within the first 8 cm. from the anus (usually 3 to 4 cm.); in 12 it was higher up.

The circular form was present in 70%, the remainder being about equally frequent on front and back wall.

Metastases existed in 5 on admission (omentum, retroperitoneal and inguinal glands, externally on anal border).

Methods of radical operation.—The contraindications are first considered. Amongst these the high seat and local extension of the growth no longer play the important part. Adhesions complicate and may forbid the operation, though they are of less account when to the sacral periosteum than when to the prostate vagina, or especially the bladder. In two of his cases a part of the prostate was exsected.

So-called amputation of the rectum was practiced in three cases, and after forcible dilatation of the sphincter in two. Provisional anterior incision was made in one case, posterior sphincter incision in seven, division of posterior rectal wall up to the tumor in six, and resection of the coccyx in one.

The use of the ecraseur thermocautery, etc., is of course condemned.

The indicated operation in the different types of cases he gives as follows:

1. Cancroid of anal portion. Excision of diseased tissues and suture of the healthy mucous membrane.

2. Carcinoma extending circularly upwards from the anus but easily definable. Lispranc's method of amputatio recti, if necessary with posterior incision of the sphincter. Continence is fairly satisfactory after this method, even without a pad; hence it is to be preferred to the sacral method recommended by Hochenegg.

3. For neoplasms beginning considerably above the anus and extending circularly upwards, whether the upper limit can be felt or not. Kraske's operation is indicated. The sphincter is saved and longitudinal incision of the posterior rectal wall is avoided.

4. For very high-seated carcinoma the sacral method is the only one possible.

5. The indications for limited tumors in the rectal wall are various. When near the anus Simon's forcible dilatation will usually make them accessible. When higher up in the posterior wall Kraske's operation is in place. After exposure of the rectum an ellipse, transverse if possible, is excised from its wall, the edges sutured and the wound drained. Temporary resection of coccyx and sacrum would perhaps be specially indicated here as less space is needed than for a total resectio recti. In cases of high seated nodules in the anterior wall a total resection of the gut will be best, or the sacral method must be discarded and the sphincter and perineum divided anteriorly from the anus according to Dieffenbach.

Some of the conditions favoring success in this operation are mentioned. Every patient is subjected to a preparatory course directed to a thorough and complete emptying of the intestines. Fluid diet for 8 to 10 days, laxatives, injections of water and harmless antiseptics (salicylic) the tube being carried well up the bowel. Emptying of the bladder immediately before the operation. The antiseptics of the operation are very important. Especially where the peritoneal cavity is opened success is rare without antiseptics but the rule with them. Carbolic and salicylic acids have here proven uncertain. Sublimate and iodoform have proven best. The former for primary disinfection of wound, in strength of 1 to 2,000 or 3,000 has never caused poisoning in his cases. Iodoform gauze (20%), even when well shaken out before using, has, however, produced toxic symptoms though in his list no death; still its place can not be taken by anything else as yet.

The drainage all agree must be thorough. Strips of iodoform gauze alone or an unperforated tube wrapped in same have proven satisfactory. Instead of permanent irrigation, cleansing once or twice daily with a $^1/_{50}$ or $^1/_{100}$% sublimate solution has sufficed. Opiates are

given at first, later laxatives. As soon as drain and sutures are removed and the wound is granulating the patient is bathed once or twice a day. The dressing consists in sublimated wood-wool cushions retained by a T bandage. The peritoneum was injured and immediately sutured in 6 cases, without any bad results. A table of 52 cases of such injury to the peritoneum, 26 treated with suture and 26 without, show 6 deaths in the former to 10 in the latter—all from peritonitis.

Suture of the gut-ends is admissible though very uncertain in the old low operation, and certainly not called for when there is any remaining bridge of mucous tissue. But in the sacral method it is strictly demanded and gives the most ideal cure. In complete circular suture it is well to pass a large drain well up the rectum beyond the sutured spot to avoid fæcal stasis.

For operation the patient lies in lithotomy position, unless for the sacral operation when upon the side. His mortality was 2 in 22 radical operations (20 for primary and 2 for recurring growths). Both deaths occurred under carbolic or salicylic antisepsis (one from retroperitoneal phlegmone and one from delirium tremens). By a comparison of the statistics of many authors he shows that whilst formerly the mortality was about one-half it has been reduced, largely owing to antiseptics, to 5-10%.

Palliative methods he divides into two classes: 1, scraping, burning and cauterization of the cancer; 2, colotomy. Between the two stands Verneuil's linear rectotomy. But Stierlin points out that the palliative procedures directly on the cancer itself do not protect it from fecal irritation, and usually have to be repeated. The normal procedure here is colotomy, and he favors with most Germans the intraperitoneal method. Although several exhausted (moribund) patients died within a few days there was only 1 of his 13 that died from the colotomy (gangrenous phlegmon of the abdominal wall). The entire freedom from peritonitis he attributes to strict antisepsis.

The later history of his patients is followed out in detail and considered from various standpoints. The whole duration of the disease in 6 not-operated patients and 2 in which colotomy did not affect their course averaged just one year. This time is shorter than that found

by most observers, though Cripps gives 1 to 1½ years. His 8 cases of colotomy (2 still alive) gives an average duration of 28.8 months, thus harmonizing fairly with other statistics. Of his 18 radical operations' the later history of which he has been able to follow, 6 are still free from recurrence (1 to 4 years) 2 have recurrence though still alive, and 8 have died (7 from recurrence and 1 from pleurisy). The average whole duration of the disease in 6 who have died of relapses amounts to 32.7 months. He figures out that cases which have remained 3 years after the operation, free from recurrence, may be considered definitely cured. For various reasons a second operation (for recurrence) is rarely of much use. He finds only 2 such cases (Volkmann, Turner). in which a cure was finally effected. As a whole, in comparison with other regions of the body, he concludes that radical cures are relatively frequent after extirpation of rectal cancer, and at least the prolongation of life in all suitable cases very well established.

As to the conditions following extirpatio recti he gives the results of a recent examination in 8. General condition, digestion, appetite good, increase of weight the rule. Complete control of the rectum (continence) had been regained by 3 (1 forcible dilatation. 1 excision of nodule from posterior wall with incision of latter from below up, 1 typical resection of rectum after Kraske.) Usually a relative continence was present, unless during some attack of diarrhœa. There was complete incontinence in only 1 (high amputation with resection of coccyx). Prolapse of the rectal mucous membrane was present in several, though very annoying in only one. Troublesome stenosis was present in none. Pain in defecation, discharges, hæmorrhage were absent in all that remained free from recurrence As over 50% recur it is important to know that even then they are largely spared their former troubles, owing to the somewhat different seat and extension (*e. g.*, metastases of internal organs).

The period of after-treatment in his radical cases averaged 84 weeks. It involves much pain and discomfort to the patient.

3. At the fifty-seventh annual meeting of the British Medical Association, held in Leeds, the subject of the treatment of cancer of the rectum was brought before the Section in Surgery for discussion, by

the chairman, T. R Jessop, of Leeds. Mr. Jessop at first called attention to the fact that there were no medicines which exert a curative effect, but much in the way of palliation can be accomplished by their use. In cases where the upper part of the bowel is involved, he advises the use of laxatives; while astringents should be used where the sphincters are involved, so as to prevent incontinence of fæces.

Operative procedures he considers under two heads; operations for oblation of the disease, proctectomy, and secondly, those for diverting the fæces from their passage through the rectum, and thus dispensing with the rectum as an active organ. Proctectomy may be done in a few otherwise inoperable cases, where there is partial obstruction.

Proctectomy he places among the established surgical procedures. Jessop reports seven cases, with one death, in which he performed the operation. Of the six favorable cases, in three the disease was in the posterior or lateral wall of the rectum, above the sphincter and entirely within reach of the finger. These three patients are alive, one at the end of twenty-one months, and another at seventeen months with no return, while the third had a recurreuce at the end of nine months. In a fourth case a recto-vaginal fistula was produced, but this has closed so much that it only occasionally gives trouble; no return of the disease at the end of thirteen months. In the two remaining cases the disease was of a higher level, and in both the growth was removed without much difficulty. In one case the stump was brought down and stitched to the anus, and in the other Douglas' sac was opened, so that here free drainage was used and no sutures introduced; no return at the end of twenty and twenty-six weeks respectively. The death was due to shock. Jessop states that excellent immediate results have been obtained, and that the conditions as regards defecation and local suffering are almost all that can be desired, and are incomparably better than the most exceptional colotomy can effect. These advantages are coupled with the hope of a more or less prolonged immunity from the disease. Hæmorrhage was easily controlled, and the cases without suture did as well as those in which they were used. The rectum should be washed, for several days after operation, every eight hours. Jessop has never preceded the operation by colotomy, but considers this a good measure.

Colotomy.— Before discussing this operation he reviews the mode of death in one hundred and two cases, as bearing on the propriety of the procedure. Of these, seventeen died of complete obstruction, unrelieved by operation, and fifteen underwent lumbar colotomy. Thus thirty-two cases, or 31.4%, would have died of obstruction if left to nature. Of the remainder, three died from hæmorrhage, five of acute septicæmia, two from extension to surrounding parts, in nine left lumbar colotomy was done to relieve symptoms other than obstruction, and in fifty-one, just one-half of the whole number, death was the result of exhaustion. The author states, as an important fact, that in none of the thirty-two cases of obstruction was the growth within easy reach of the finger. He believes, therefore, that in cancer of the lower part of the rectum there is not much fear of obstruction, but where the upper portion of the rectum is involved, complete obstruction is sure to come sooner or later. This, he believes to be the result of the anatomical relations, for the lower part of the bowel being fixed, the contraction of the colon above forces the fæces through the constriction, while in the upper portion of the bowel, which is comparatively free, the movements from above are more liable to invaginate the bowel or so displace the growth as to close the opening through it. From this the author concludes that, in cases in which the growth is high up, colotomy should be urged as soon as any symptoms of obstruction appear. He prefers the left lumbar region, as the operation is easily done here, and is sufficiently removed from the growth. In cases low down in the rectum, in which complete obstruction is not likely to occur, and in those where excision is impracticable, he recommends colotomy. From his cases he states that the average duration of life, dating from the first symptoms, in those not operated upon, was seventeen months, while in those who underwent colotomy it was twenty-two and a half months. Again, of the cases operated upon, the average length of life after the operation was fifty-three weeks, while in those in whom operation was recommended and declined, it was only thirty-four weeks; thus, those submitting to operation had life prolonged nineteen weeks. As to the relief of symptoms, complete relief from pain and distress is never obtained, but af-

ter observing his cases, Jessop concludes that the continuous pain is lessened in severity, the almost constant desire to evacuate the bowels disappears in some and is diminished in others; incontinence of fæces is usually absent in colotomized patients, and finally the motions are discharged with ease and regularity.

Mr. Jessop has never performed inguinal colotomy, but has operated one hundred and three times in the lumbar region. He states that he is not entirely satisfied with the latter operation.

MR. MARSH (Birmingham) advocated a preliminary colotomy, after Madelung's method, or colectomy in all cases in which proctectomy was undertaken. He removes the bowel by an oval incision made around the anus and deeply down to the coccyx, and then rapidly detaches the rectum with scissors; hæmorrhage is controlled by pressure.

MR. BANKS (Liverpool) also favored preliminary colotomy or colectomy. He believes the only advantage of inguinal over lumbar colotomy is to render the operation somewhat less difficult; the artificial anus in this region is not taken care of more easily. Banks completely divides the colon and stitches the upper opening of the gut into the wound.

MR. CRIPPS (London) does not consider colotomy and proctectomy rival methods of treatment. Excision is only applicable to a small proportion of the cases of cancer, about 20%, and should not be undertaken if the upper limit of the growth is beyond the reach of the finger, or if the growth has extended to the surrounding organs. He calls attention to the fact that invagination of the bowel at the point of disease may occur as a result of constant straining, and thus an error in the location of the disease be made, as the origin is higher up the bowel than would be supposed from the examination. Of thirty-cases, between the ages of 27 and 76 years, operated upon, he gives a mortality of 7%, one death being from erysipelas and the other from exhaustion. The duration of life in the twenty-eight cases which recovered is as follows: six, no reliable after-history; ten, recurrence within a year; four, recurrence between the first and third years; one died without recurrence a year after operation; one, no recurrence after eighteen months; and six, no recurrence at the end of three months

in one, nearly two years in two, three years in one, four years in one, and nine years in another case. Even in the cases where return takes place the pain is never so severe as with the original growth.

Mr. Cripps operates with the patient in the lithotomy position and the buttocks raised; a sharp pointed curved bistoury, guided by the finger or speculum, is passed up the bowel, and then, by transfixion, is made to protrude through the skin on a level with the side of the coccyx, the whole of the intervening tissues from this point to the anal margin, being cut through. A crescentic incision is now made, extending from the margin of the first cut to a point in the middle line in front; this cut should extend well into the fat of the ischio-rectal fossa, and if the disease is not too low down, should go through the mucous membrane so as not to interfere with the skin at the anal margin. Dissection is then carried upwards to a point well beyond the seat of the disease; the same is done on the opposite side. A sound in the bladder, in the male, will greatly assist. The bowel is then cut across and is not sutured. The wound is then packed for thirty six hours. After the second week bougies are passed regularly.

Colotomy has had a rather high death rate, being 38% in 110 cases reported by Erckelen and 43% in 60 cases reported by Mr. Bryant. This high mortality depends more upon the delay in operating than upon any dangers in the operation itself. Mr. Cripps reports 14 cases of lumbar and 26 of inguinal colotomy with only one death. This death followed an inguinal colotomy in which the bowel fell back into the abdominal cavity, with extravasation of fæces and peritonitis resulting. Of these forty cases obstruction was partial in thirty-seven and complete in three. Cripps prefers the inguinal region because it gives more room, the bowel is more easily identified, in fat subjects the bowel can be fixed to the skin with less tension, and, lastly, if the bowel should take an abnormal course the operation is not affected as in the lumbar region. The bowel may be opened immediately if necessary.

The incision, made by Mr. Cripps for inguinal colotomy is made at a right angle to an imaginary line drawn from the anterior superior spine to the umbilicus and about two inches internal to the spine. To prevent prolapse, the bowel should be drawn down before suturing.

H. ALLINGHAM (London), said that incision was justifiable only in those cases where there was a small annular growth freely movable, and only when this starts two inches up the rectum, and where the upper limit of the growth can be easily felt. His method of excision, which he claims can be accomplished in fifteen minutes, is as follows: lithotomy position, left forefinger in rectum; a straight bistoury is introduced half an inch behind the rectum, and keeping outside the rectum to a depth of three inches, and the cut made to the coccyx. Next the rectum is divided in the whole of its circumference between the sphincters, then with scissors the tissues, on either side of the bowel, are divided and a careful dissection is made along the anterior wall, up to a point beyond the disease when the rectum is cut across. Colotomy, inguinal preferred, is to be done in those cases where the growth is extensive and causing much pain and also in cases where there is rapidly spreading ulceration.

MR. MAY (Birmingham), reported thirteen inguinal colotomies with but one death and twenty-three lumbar, with five deaths. He strongly recommends the immediate opening of the bowel in the inguinal operation.

MR. JASSETT (Brompton), gave as his opinion that in very few cases should excision be recommended, and then colotomy should be done before the incision. He prefers inguinal colotomy and recommends complete division of the gut and, after suturing the distal end, suturing the proximal end into the wound. He reports five successful cases.

MR. PARKER (Liverpool), reported two cases of excision alive and able to work two and a half years after operation. He would not limit excision to growths low down but would remove coccyx and part of the sacrum if necessary.

MR. MCGILL (Leeds), had substituted colectomy for colotomy in the lumbar region. In two cases in which he did colectomy death resulted from a gangrenous condition developing, as a result of retaining fæces in the lower portion of the bowel. He would, therefore, not recommend the operation unless the upper end of the lower portion was left open in the wound.